

A1
(hereinafter multi-chip) modules for use in power applications.

Page 2, in the paragraph beginning on line 7, change as follows:

X2
Accordingly, it would be desirable to have a multi-chip module for use in power applications which is simple in construction and therefore economical to fabricate, and in which performance parameters such as reduced EMI are enhanced.

Page 2, in the paragraph beginning on line 13, change as follows:

X3
It is therefore an object of the present invention to provide a multi-chip module for use in power applications which is simple in construction, economical to fabricate, and capable of offering enhanced performance.

Page 3, in the paragraph beginning on line 25, change as follows:

X4
In the simplified cross-sectional view of the single Figure, a multiple semiconductor chip (multi-chip) module 10 for use in power circuit applications is shown. The multi-chip module 10 includes an electrically conductive heat sink 20, typically a metal heat sink of copper or aluminum, on which are directly mounted a plurality of semiconductor chips, such as chips 30 and 40 shown in simplified form within bold rectangles in the Figure. It should be noted that the semiconductor chips 30 and 40 are directly mounted

A4
on the conductive heat sink 20 without the use of a separate electrical insulation layer as is typically required in the prior art.

Page 4, in the paragraph beginning on line 10, change as follows:

A5
In the example shown, semiconductor chip 30 is a power semiconductor chip, here shown as a Silicon-On-Insulator (SOI) device having a semiconductor substrate 38, a buried insulating layer 39, and an SOI layer 32 having at least one semiconductor device symbolically shown by region 34 provided therein. The term "power semiconductor chip" is to be understood as relating to any chip, such as a chip containing an output circuit, which operates at a higher power level than that of the control chip, and not to any specific power level. Electrical connections to the semiconductor device 34 are symbolically shown by the single electrode 36, although it will be apparent that in an actual device more than one connection will typically be provided. By placing all of the relatively high-voltage and high-power components of the multi-chip module on SOI power semiconductor chip 30, it becomes possible to directly mount the semiconductor chip on the conductive heat sink 20 without the use of a separate electrical insulation layer, since the portions of the chip connected to high voltage are insulated from the substrate 38 by oxide insulation layer 39 within

15 the chip itself. Power semiconductor chip 30 can be directly mounted on the conductive heat sink 20 by known conventional methods, such as soldering or gluing with a conductive glue. If power semiconductor chips other than SOI chips are used, they must be capable of operating with their substrates connected directly to the conductive heat sink.

Page 5, in the paragraph beginning on line 4, change as follows:

16 The multi-chip module 10 also includes a control semiconductor chip 40 shown in simplified form in the Figure, also directly mounted on the conductive heat sink 20 without the use of a separate electrical insulation layer. The control semiconductor chip 40 is symbolically shown by a substrate 46 in which is formed at least one semiconductor device 42, with electrical connections to the device being symbolically shown by the single connection electrode 44. As shown in the Figures, control semiconductor chip 40 employs bulk technology as opposed to SOI technology, with no insulating layer between device 42 and substrate 46.

Page 6, in the paragraph beginning on line 21, change as follows:

17 In the foregoing manner, the present invention provides a multi-chip module for use in power applications which is simple in structure, economical to fabricate and which offers performance